

CENTER FOR INSTITUTIONAL REFORM AND THE INFORMAL SECTOR

University of Maryland at College Park

Center Office: IRIS Center, 2105 Morrill Hall, College Park, MD 20742
Telephone (301) 405-3110 • Fax (301) 405-3020

AGRARIAN INSTITUTIONS AND AGRICULTURAL PRODUCTIVITY: AFRICA IN THE EUROPEAN MIRROR

September, 1994

Gregory Clark
Working Paper No. 130

This publication was made possible through support provided by the U.S. Agency for International Development, under Cooperative Agreement No. DHR-0015-A-00-0031-00.

The views and analyses in the paper do not necessarily reflect the official position of the IRIS Center or the U.S.A.I.D.

Author: Gregory Clark, Department of Economics and Agricultural History Center, University of California, Davis.

'AGRARIAN INSTITUTIONS AND AGRICULTURAL PRODUCTIVITY:
AFRICA IN THE EUROPEAN MIRROR

Gregory Clark
Department of Economics and Agricultural History Center
University of California
Davis, CA 956 16
(916-752-9242, gclark@ucdavis.edu)

A REPORT FOR INSTITUTIONAL REFORM AND THE INFORMAL SECTOR
UNIVERSITY OF MARYLAND AT COLLEGE PARK

Abstract

Attempts to reform agriculture in underdeveloped countries have been informed by the idea that exclusive private property rights were a prerequisite to an efficient agricultural sector. Thus the 1989 World Bank Report Sub Saharan Agriculture. From Crisis to Sustainable Growth, stressed the need for changes in land law **from** communal property rights towards individualized rights. Yet there has been dispute about whether costly state intervention is required in these matters, or whether land rights will endogenously evolve towards efficient outcomes.

The experience of Europe has seemingly provided **powerful testimony that communal** rights in agriculture can be highly **inefficient**, yet persist for centuries in the absence of state intervention. This paper re-examines the evolution of property **rights in England from 1500 to 1837 and finds that contrary to the received** wisdom:

1. Taking into account the amount of capital invested in land there was little difference in efficiency between exclusively private and communal land.

2. Cultivators were thus not trapped by the prevailing set of institutions. Indeed quite small economic gains were sufficient to make them radically change the institutional framework.

3. The transition **from** communal property rights to purely private property was explicable by **changed economic incentives**.

Based on the misguided notion that common fields were radically inefficient, which stemmed **from** the English agrarian reformers, there was a **pan-European** movement by governments in the eighteenth century to eradicate common fields. This movement largely failed because of resistance **from** local cultivators. The implication of these finding for England for modern underdeveloped economies is to suggest that expensive Government schemes designed to change agrarian property rights and consolidate land holdings are not any more likely to be worth pursuing until there is evidence of a popular demand for them.

1. INTRODUCTION: THE PROBLEM OF COMMUNAL PROPERTY

The presumption of much work on the development of **agriculture** in underdeveloped countries, **and** in particular in **Sub-Saharan Africa**, **has been that**;

1. Efficient agriculture depends on establishing exclusive private property rights in land. To be **farmed efficiently** land needs to be in consolidated units with exclusive property rights.

2. The establishment of these property rights needs to be directed from above by state action, even in the face of popular opposition.

Thus the 1989 World Bank Report Sub Saharan Agriculture, From Crisis to Sustainable Growth, stressed as a major recommendation the need for changes in land law **from** communal property rights towards individualized rights. In doing this it is simply restating views on land tenure that can be traced back to English Colonial administrators in the late nineteenth century, and that are held by **many** economists and development advisors today. For example Peter Dörner notes that,

in much of **Africa** the key problem is to **transform** traditional customary land tenure systems
(Dörner (1972), p. 44)

William Duggan writes in the introduction to his book on Southern African Agriculture,

This book presents an economic history of Southern African agriculture **from 1800** to 1980. It singles out “the commons” as the most important factor contributing to the region’s present configuration of successful white farming and **stagnant** African agriculture (Duggan (1986), p. 1)

As Duggan notes **from** the 1840s British land policy in Southern **Africa** was centered on the problem of inducing a switch by native cultivators from communal land use to a system of enclosed and exclusively private tenures. By **1860** the governor **of Natal was devising schemes to gradually move native land tenure towards enclosed exclusive** private tenures. The South African Native **Affairs** Commission of 1903-5 cites as the most important issue to be addressed the problem of communal tenure. The commission recommended a variety of measures to eliminate the commons, including measures to prevent natives buying more commercial land or renting it **from** white owners, since that would perpetuate communal tenures. These measures were largely unsuccessful within the native

reserves.⁰ Duggan concludes of the current state of African agriculture in southern Africa, “The commons **endures**, and the industrial world **leaves** it behind.”

These writers are not embracing the view that peasant cultivators are simply irrational, or are unresponsive to market forces. Rather they hold that peasants are only able to maximize their interests within a given institutional framework, and changing that framework is not something the individual cultivator can do, no matter how much they desire it.

There is, however, surprisingly little direct evidence of the role of communal land systems in inhibiting the productivity of **African** agriculture. For most writers the assumption that cultivation of scattered plots on communal land is inefficient is taken as **sufficiently** obvious that it needs no further **justification**.² What empirical work there is has concentrated on the narrower question of the security of land tenure. Richard Barrows and Michael Roth recently survey what little empirical **evidence** there is for Kenya, Uganda, and Zimbabwe and find little sign that the creation of exclusive private tenures has much effect on investment in agriculture.³ Migot-Adholla et al. similarly **find** no evidence that land tenure arrangements affected productivity levels in Ghana, Kenya and Uganda in the **1980s**, though again they look only at the question of how land tenure is defined, and their measure of productivity is rather limited (Migot-Adholla, Hazell, **Blarel**, and Place (1989)).

There is also strong evidence of little desire on the part of cultivators to switch to a “European” system of consolidated exclusively private plots. In places where there was legal consolidation and individualization of land, such as Kenya after 1957, and Antananarivo in Madagascar in 1929, traditional forms of land holding persisted in opposition to the new legalities. In the French colonies in Africa title registration was available by the **1920s**, yet a minimal amount of land was ever **registered**.⁴

This paper looks at the European experience of the enclosure of common agriculture, and in particular at the experience of England. England was the first country to largely reform its agricultural sector as a purely

⁰Duggan (1986), pp. 37-9, 129-134.

¹Duggan (1986), p. 225.

²See, for example, Harrison (1987), pp. 58-9, 313-4, 328-9).

³Barrows and Roth (1990).

⁴Riddell and Dickerman (1986), pp. ix, xi.

private one, and the model that served as the inspiration for enclosure movements pushed by governments across Europe in the eighteenth and nineteenth centuries. The English experience is believed by almost all **observers to** prove that communal agricultural systems were markedly inefficient, and that these inefficient systems left to themselves could persist for a very long time.⁵ Indeed writers on the agricultural development of other north European countries typically lamented their failure to quickly follow the English example and create a modern privatized agriculture.

Using a large new set of data on land rents between 1500 and 1837, **from** which it is possible to derive accurate measures of the relative efficiency of open and enclosed agriculture, I conclude that:

1. Taking into account the amount of capital invested in land there was almost no **difference** in efficiency between enclosed and communal (open) land. Enclosed land was perhaps 3% more efficient than open.
2. Cultivators were thus not trapped in inefficient systems by the prevailing set of institutions. Indeed quite small economic gains were **sufficient** to make them radically change the institutional framework.
3. The reason the transition to a purely privatized agriculture took so long even in England was that the costs of the capital **investment** needed to create enclosed agriculture fell over time, and the gains **from** enclosure increased.

If any lesson can be drawn from European experience for modern **underdeveloped** economies it is thus that there is little sign that radically inefficient property rights regimes persisted for long in **Europe**. If **African** countries are to invest large quantities of resources in remaking agrarian institutions they need to find much more compelling evidence than the speculation of economists that radically inefficient institutions will persist in the agricultural sector. In the absence of such a framework it would be much better to simply be responsive to demand **from** the cultivators for reform of institutions, and discover if there is such demand, rather than like the English colonial authorities impose reform **from** above on an unwilling **peasantry**.

⁵Allen (1993) dissents **from** the view that open fields were markedly socially inefficient, but curiously accepts that there were large private profits to be made **from** enclosing **them**.

2. EUROPEAN COMMUNAL AGRICULTURE

In the pre-industrial era in countries across a wide swath of northern Europe • England, Scotland, Belgium, Northern France, the Netherlands, Denmark, Sweden, Germany, Poland, and Russia • much of the land was held not as exclusive private property, but in some form of joint ownership **called the common field or open** field system. As this system operated in England the arable land of the village was divided into a small number of large fields where the plots of the individual cultivators lay scattered undivided from each other. Individual cultivators would hold anywhere **from** 0.5 to 100 acres, typically in plots of .5 acres or less. In spring and **summer** the owners would grow grain plots on their land, but **after** the harvest and in the frequent fallow years the field was pastured by all who had pasture rights in common. The meadow land similarly lay in open meadows where the owners mowed their individual plots, but afterwards the field was again depastured in common. Sometimes the meadow land was allocated annually by lot. There were also areas of common “waste” where all were **free** to graze animals and gather wood for fuel. Thus almost all the land was subject to some degree of multiple **ownership**.⁶

Economists immediately see incentive problems with such arrangements. Unless there is some other **market imperfection** in place most economists would argue that exclusive private property rights are the efficiency maximizing institution (**Demsetz (1967)**, Posner (1977), North and Thomas (1977)). With multiple ownership some of the gains from my efforts to increase the fertility of my plot will go to other cultivators. If, for example, I manure my meadow plot I will get a higher hay crop, but the other owners will get the benefit of the grass that grows **after** the hay harvest. Also any many attempts to innovate by changing land use patterns **from** the standard village agricultural cycle will be frustrated. Grain **yields** probably increased in Europe **before** the introduction of commercial fertilizers largely it seems from the adoption of nitrogen **fixing** crops such as clover instead of the traditional fallow years. Yet in the open fields the clover would be eaten by the grazing animals unless all switched at the same time to this practice.

This presumption of the inefficiency of open agriculture became an axiom for many agricultural reformers, and indeed for many historians. **Blum** (1978) illustrates nicely how the speculations of economists in this matter has become the received truth for many historians. Writing of enclosure in Europe he notes,

⁶These grazing rights were not open to all. but attached to ownership of land or cottages in the **village**.

That metamorphosis was the single most important departure from the traditional agriculture, heralding as it did the transition from communalism, with its collective rights and collective controls, to individualism with its private rights of property and its individual **freedom** of action (Blum (1978), p. 263).

In the late eighteenth century the enclosure movement of England became a “pan-European” movement. European agricultural experts and improving landlords advocated adopting the rational property rights regime of England in contrast to the “barbarous conditions” and “primitive customs” of their own lands. Governments across Europe decreed that the common fields should be **eliminated**.⁷ These campaigns generally had limited **success**. **But the** concerns of economists are seemingly borne out by the broad correlation in Europe in 1850 between the degree to which open fields had been replaced by exclusive private property rights in Europe in 1850 and the level of agricultural efficiency. England, the country which had almost completely eradicated the common fields had **the highest yields and the highest labor productivity in Europe by 1850**. **Denmark, an early enclosure** had also a relatively **efficient** agriculture. Eastern Germany, Poland and Russia with the most extensive areas of common field agriculture had the least efficient agricultures.

The macro level correlations observed in the nineteenth century are seemingly confirmed by micro level evidence from England. Donald **McCloskey** correctly pointed out that the speculations of economists on the **inefficiency of open field agriculture were not worth much**. **The true test of its inefficiency** would come from looking at the rents on open and enclosed land. The large rent increases which were reported when open fields were enclosed in the late eighteenth century seem to be strong evidence for the inefficiency of the open-field **system**.⁸ Rents it was said **often** doubled or tripled upon **enclosure**.⁹ Thus,

Everyone agrees that rents rose precipitously immediately after enclosure. The data indicate that they **commonly** doubled and tripled and in some cases rose even more (Hum (1981), p. 503)

⁷Blum (1978), p. 265.

⁸McCloskey (1975a, 1975b).

⁹Chambers and Mingay conclude, for example, that “perhaps a doubling of rents, **from** about 7s to 15s per acre was the common result of enclosure in the Midlands.” (Chambers and Mingay (1966, p. 85)).

Purdum in a study of 5 villages in England in **the late eighteenth century** reports that rents per acre increased between 58% and **300%**, implying rates of **return** on **the** capital invested in **the** enclosure in each village that averaged at minimum **15.5%**, well above the interest cost of capital actually borrowed for the enclosures of **5%**.¹⁰ Interestingly the same doubling or tripling of rents is quoted in the 16th century by some pamphlet writers advocating enclosure.

Since at the individual village level the enclosure would not change the cost of capital or the wage rate the increase in rents minus the capital costs of enclosure should measure the gain in efficiency (assuming rents are at market levels before and after enclosure). Enclosure did **have** costs in **the** form of administration, of new fencing of the **land** and of reconstruction of the road system. These costs have been **estimated** at **£6.3** per acre in 1800.¹¹ At the normal rate of return on capital of 5% **this** implies a cost per acre for enclosure of **£0.315**. The rent rise on enclosure if rents doubled in this period would be **£0.75** per acre, and £1 an acre if **they** tripled. Thus enclosure would create an efficiency gain of between **£0.43** and £0.68 per acre after allowing for **the** costs of conversion, or a gain of about **10-15%** in efficiency.

The efficiency gains from enclosure implied by the rent evidence are thus very substantial compared to the losses observed from other market imperfections such as trade restrictions, minimum wage laws or monopolies.

The rent evidence seems to suggest two things for modern agricultural systems with common property rights. The first is that there can be great gains from eliminating these. But the second is that despite their inefficiency such systems can persist for a very long time. Despite the gains to enclosing open fields in **England** some villages remained open for over 700 years at least because of the **difficulties** of securing a change in the property rights by mutual agreement. Only the adoption of new legal procedures whereby **75-80%** of the landowners (by area) could force the enclosure of villages led to the enclosure **after** 1750 of the final 20% of the **land that was open in England. This is the message of Hoffman and Root's work on pre-Revolutionary France also** - the gains **from** the **rearrangement** of property rights can be impossible to **attain** through **free** contract. Because France had a **different** legal system where unanimity was always required the enclosure of open field agriculture

¹⁰Purdum (1978).

¹¹See Holderness (1988), pp. 18-21.

was impossible in France. ¹²

Others have read the lesson of the open fields as being that there is a trade off between **equity** and **efficiency**. Enclosed agriculture was more efficient than open, but the transition to enclosed agriculture entailed losses to the smallest land owners and occupiers, and to the formally landless. Only in England was the governing class strong enough to enforce this transition in the face of the opposition of the small holders. In other countries weaker ruling classes were unwilling to incur the wrath of the small holders. ¹³

The seeming large efficiency losses of the common field system thus present a **conundrum** to economists and historians. Does the survival of the open **fields** in Europe imply that **the** market system does not work very well with regard to agricultural land tenure systems? And if the market system did not work, why did it not work? It also implies that a vigorous campaign to replace communal tenure with private tenures is likely to be highly desirable for those countries such as Mexico and much of **Africa** which retain communal tenures.

3. SUGGESTED SOLUTIONS TO THE OPEN FIELD PROBLEM

The puzzle of the **seeming inefficiency** of the open field system has been curious enough that there have been a number of suggested solutions to the puzzle. Here I look at what I regard as the major ones • those of **McCloskey** (1975) , **Hoffman** (1988), and the radical tradition of Marx, the Hammonds, E.P. Thompson, and Cohen and Weitzman (1975) finding its **culmination** in the much more empirically informed work of Allen (1992).

McCloskey argues that the inefficiency of open field agricultural was a transitory phenomena, observed

¹²**Hoffman** (1988), Root (1987). An alternative explanation for the persistence of open fields has been given by **McCloskey** who **argues** that **they** only **became dysfunctional** with **the correction** of various other **market** imperfections • in the capital and insurance markets • in the seventeenth century which previously had made open fields an efficient response to risks in agriculture.

¹³**This** seems to be the argument of George **Grantham** in explaining the persistence of common fields in France in the nineteenth century (Grantham (1980)). Marc **Bloch** deploys a similar argument for the failure of government attempts at enclosure in the 1770s (**Bloch** (1966), pp. 219-234).

only at the close of the system as in the eighteenth century in England as a result of inertia in replacing the system with the then more efficient exclusive private property rights. He argues that in the middle ages and earlier when the system was created it was an efficient way of providing self insurance to farmers given the absence of certain other markets through allowing them to widely distribute **land** holdings in space. As other markets developed the value of this form of insurance diminished, so reducing the value of open field land as compared to enclosed. The correlation between the level of efficiency in agriculture in the eighteenth century and later in Europe and the thoroughness of the adoption of exclusive private property rights he would attribute to the simultaneity of the development of insurance markets and general economic development, not to any causal influence of property rights on agrarian development. The details of **McCloskey's** argument need not concern us here, for whatever they are, a direct test of **McCloskey's** views **would** seem to come from looking at the rent on open compared to enclosed land over time. If the open fields were an efficient organization in the medieval period then the rental value of open field land then should have equaled the rental value of enclosed land. Tenants would be willing to pay as much to get access to this land because of the ability it gave them to self insure.

Hoffman, looking at **France** where enclosure was long delayed compared to England sees the operation of the market in a **different** light. Accepting, as does **McCloskey**, that the rent change on enclosure implies the open field system was **inefficient from** at least the mid eighteenth century he is less sanguine that the market has a strong tendency to produce efficient property rights. The French experience seems to suggest that institutions that control property rights can impede the adoption of **efficient** property rights for hundreds of years or forever, and **that** the institutional **structure** of a society is something the economic policy maker needs to pay particular attention to. **Hoffman's** views in the English case would be **confirmed** if the large differential in rents between open and enclosed land was found to predate enclosure by a long period.

Allen (1982, 1992) offers a radically **different** interpretation of the enclosure movement in England, but one that finds its roots **in** the English radical tradition of Marx, the Hammonds, and E.P. Thomson. Allen argues that there was in fact little **difference** in efficiency **between** open and enclosed agriculture. Rents did rise on enclosure, but the reason they rose was because they were at below market levels on the open field land at the time of enclosure. Enclosure was largely a maneuver to terminate existing favorable rental contracts and replace them with market (or "rack") rents. Enclosure was thus privately profitable for the landlord but resulted either in no net

gain of output to society or indeed to net losses. Enclosure was legalized theft. As noted there is a long tradition that espouses the same view, though with more emphasis on the gains in rents to the large owners that came from eliminated the claims on the common land of cottagers (small holders). Thus,

Enclosure (when all the sophistications are allowed for) was a plain enough case of class robbery, played according to the **fair** rules of property and law laid down by a parliament of **property-owners** and lawyers. (Thompson(1963), p. 237-S).

Cohen and Weitzman (1975) presents a formal model of the enclosure process where there is no gain in technical efficiency from enclosure, and a very small gain in allocative **efficiency**, but rents rise from the elimination of common rights.

The crux of Allen's argument for the efficiency of the open fields is three pieces of evidence. The **first** is data for a set of farms visited by Arthur Young on his famous tours of England in the late 1760s. For these farms **Young gives the acreages under various crops, the number of workers (though only of full time workers), and the rents.** He also gives for the villages the **farms** are located within figures for the typical yields on various crops. Young was an enthusiast for enclosure, and his figures show that rents per acre were double for the enclosed **farms** as for the open. Yet if we calculate the total factor productivities for farms in open compared to enclosed villages, enclosed farms seem to have lower productivities. The tenants on open field farms derived a large surplus **from** the occupation **of the land, but on enclosed land the rent roughly equaled the difference between the value of outputs** and the cost of the tenants inputs.

The second set of evidence Allen uses are some hypothetical accounts of typical open and enclosed farms in 1806 in **Rutland** and Huntingdon given by Parkinson (1808,18 11). These show implied gains in market rentals from enclosure only on one type of land, heavy arable. For both pasture land and lighter arable land there was no **significant gain in efficiency** (Allen(1992), p.176-177).

The last set of evidence that Allen uses is information on the relative yield of open and enclosed land. Turner (1986) looks at grain yields in both types of village around 1801 when national crop surveys were taken. He finds that on average grain yields were 19% higher in enclosed villages. ¹⁴ Allen and O'Grada similarly

¹⁴Turner (1986, p. 686). Half the land would be in grass and there is no indication of relative grass yields. Thus

compare yields in open-field and enclosed villages from Arthur Young's tours in the late 1760s, and find only a 7-12% increase in yields in enclosed villages.¹⁵ Allen later recalculated yield **increases** using much of the data Turner used for circa 1801 and concludes yields were on average 9.5% higher in enclosed villages (**Allen (1992)**). The problem with using grain yields as a measure of efficiency, however, is that they measure only one component of output, the yield per acre sown with grain. Changes in the **frequency** of **fallows**, in the proportion of arable land, in the yield on pasture, and in the inputs used to attain these yields could radically change the **interpretation** of these results. Further output per acre could be increased by more use of capital **or labor** per acre on open fields so that the efficiency gain was much smaller. **Also** the greater yields in enclosed villages may **have** little to do with enclosure per se • they **could** partly stem from the fact that enclosure tended to occur first in the more fertile areas where it was more profitable, or because the villages with the most energetic and progressive farmers were the ones which tended to enclose early. Thus I think the yield evidence could be consistent with no gain from enclosure or with gains in efficiency of 20% or so implied by the supposed doubling of rents if labor inputs per acre fell after enclosure.¹⁶

Allen concludes that,

the major economic consequence of the enclosure of open field arable in the eighteenth century was to redistribute the existing agricultural income, not to create additional income by raising **efficiency** (**Allen (1992)**, p. 181)

Note that since enclosure involved costs Allen would have to conclude that the enclosure movement in England represented a net loss of social output, since large sums (equivalent to 20% of the rental of the land **annually**) were invested to **redistribute** output **from** one group to another.

Allen's work is powerful and imaginative, but rather than resolve the conundrum of the open fields it **creates a** fresh new set of **conundra**. For **Allen**, as for **Hoffman**, the market fails to work for extended **periods** of

the overall yield gain from enclosure may be only half the 19%.

¹⁵Allen and O'Grada (1988, p. 98).

¹⁶Fenoaltea (1988) pp. 195-196 makes essentially these same points about the yield evidence as measures of agricultural **efficiency**.

time, and fails to work in curious ways. For he **finds** as noted above that going back as far as 1450 open field pasture is worth half or less than enclosed pasture, even after long periods of relatively stable money rents **such as** in the period 1600 to 1750. If open fields are not much less efficient than enclosed it implies that rents **in agriculture are set in curious ways**. Owners would **persistently charge tenants** of open field land less **than tenants** of enclosed land. Why? Allen argues that the **failure** was one of perceptions. There was a conventional belief among both owners and tenants that enclosed land was worth double the rent of open land, which market pressures somehow never changed. But where did this conventional belief come **from**? And why didn't the observed prosperity of those **farming** the open fields lead to a change in views?

Further if owners and tenants believed erroneously as early as 1450 that enclosed land was worth **double** the rent of open land, then why weren't owners pressing to enclose much earlier? Why did 21% of the land of England still lie open in 1750 when owners had believed since 1450 that if they enclosed the land they could double the rent?

4. A SOLUTION TO **THE** CONUNDRUM OF **THE** OPEN FIELDS

Using two new large sets of data on market land rents in England this paper proposes a simple solution to the conundrum posed by the English enclosure movement. The market rental value of **enclosed** land compared to the same land in the open fields was indeed higher, but only about 33% higher.¹⁷ The interest cost of the **capital expenditures required** to move land from the open field to the enclosed state was in the order of 25% of the rental **value** of land circa 1800. Thus there was very little social gain from enclosing land. A net **efficiency** gain after the costs of conversion of only 2.5%. Open fields persisted because they were not very inefficient.

The private gain to the landlord from enclosing came from two possible sources. The first **was** by permanently increasing the market **value** of the land. Where tenants held on annual leases ("at will") the rent immediately before and after enclosure should reflect the change in the market **value** of land. But many tenants held on longer leases. 7, 14, 21, two lives, and three lives were all common lease arrangements in the eighteenth

¹⁷The "market" rental of land is the rental **value** of the land if leased in a competitive land market.

century. In this case under Parliamentary Enclosure the enclosure commissioners were generally empowered to “determine, if necessary with compensation, all leases having less than 21 years to **run.**”¹⁸ What this meant in practice is somewhat obscure. Seemingly most current leases would be ended and new leases taken out at the enclosure. In periods of rising rents as was the case all the way from 1750 to 1815 if compensation was not paid, or if the compensation was inadequate, the landlord would get a further gain. Unfortunately the extent to which lessees were **fully** compensated is unknown.

Figure 1 shows these two potential areas of gain. The dotted line shows the market value of open field land, the dashed line the market value of enclosed land. The solid line shows the actual rents before and **after** enclosure. The discounted value of the shaded area is the net gain **from** enclosure.

FIGURE 1

The gains **from** terminating existing leases if the lease holder is not compensated will be small relative to the permanent gains for three reasons.

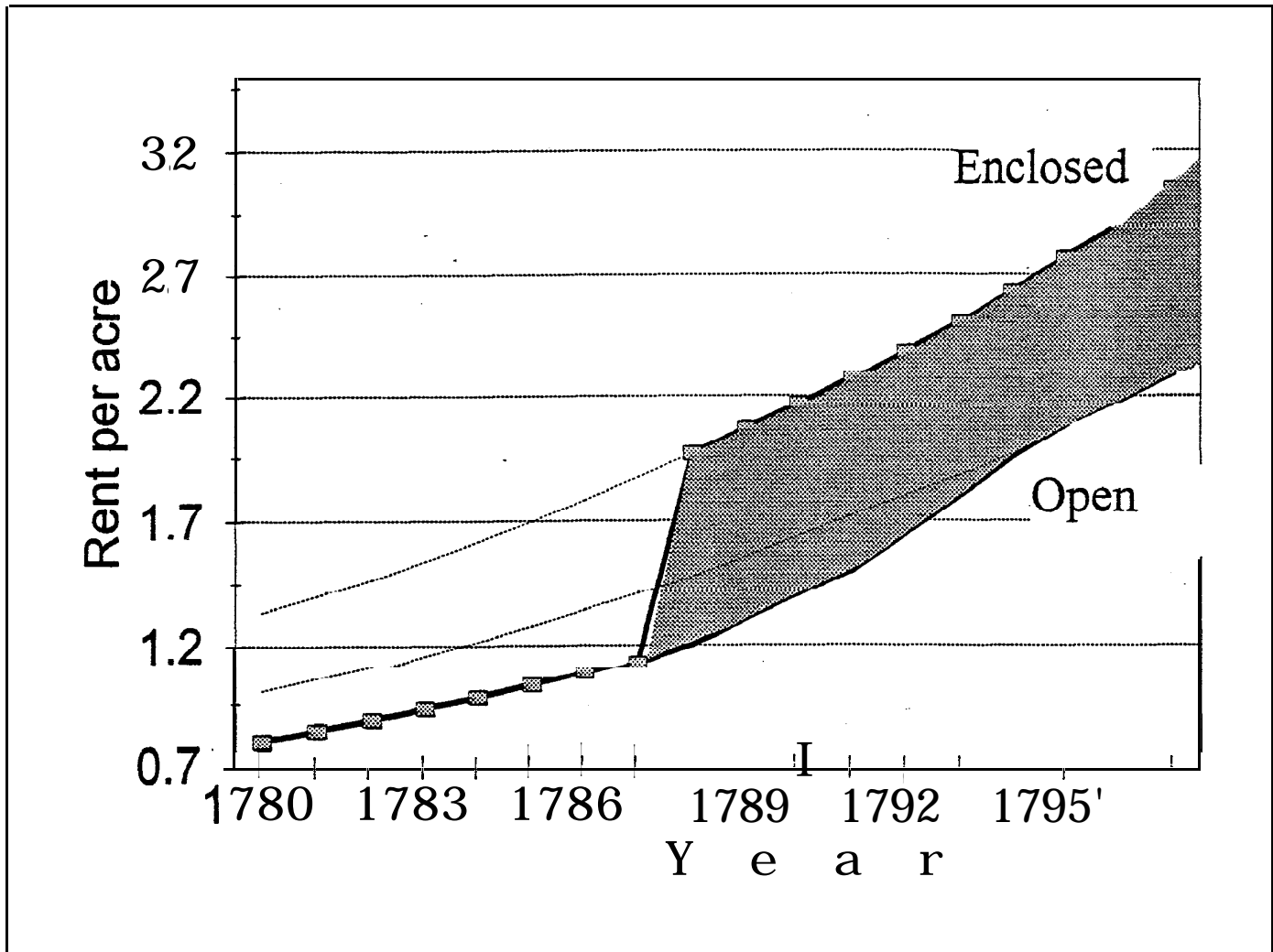
(1) In the kinds of rent **inflation** experienced in England between 1750 and 1815 the average departure of rents in leases **from** market rents would be only about 20% if the average length of lease was 21 years.

(2) The gain **from** re negotiating the **leases** is only **temporary**. The open **field rents would have risen to market** values eventually themselves. This just accelerates the process. If leases were all for 21 years, then at the 5% rate of return prevalent throughout much of this period a £1 gain in annual rents that was permanent would be worth **£20**, but a £1 gain **from** re negotiating leases would be worth only **£8**.

These considerations imply that if landlords got a return of 33% of the rental value of land by permanent rent increases on enclosure **they would get** a return **by** re negotiating rental **agreements that** was **at** maximum equivalent to about an 8% permanent rent increase, if they did not have to pay any compensation, though total rents would rise by as much as 60%. The private gain from enclosure would thus be positive, but would be

¹⁸Tate (1978), p. 37. Curtler (1920), p. 314 states that it was general to end all leases at rack rent. The amount of compensation paid to those who lost their leases was determined by the enclosure commissioners, and is unknown.

FIGURE 1: THE GAINS FROM ENCLOSURE



Note: The figure shows that in periods of rent inflation there **are** potentially two gains from enclosure. The upper shaded area is the permanent gain. The lower shaded area is the gain **from** ending existyng leases where this is possible.

relatively modest compared to the opportunity cost of capital. Thus the reason that enclosure was such a long **drawn out** process in England, lasting from **1400** to **1840**, was that it **was a** marginally profitable enterprise **whose** profits would be sensitive to economic factors such as the rate of return on capital, the type of land being enclosed, and the level of nominal rent inflation. There were no dramatic market failure in the land tenure system in **pre-**industrial England, as **Hoffman's** and Allen's accounts would imply. The French political and legal system may **have** prevented France following England and enclosing, but if open fields in France operated as in England there was little cost to **that**. ¹⁹ **Indeed** the inertia of the French legal system may be **explained** by the lack of interest people had in changing the system. Also while enclosures may have redistributed some income between tenants and landowners, and while that may have been partly the motivation for enclosure, the general **effect** would have to be rather small.

These conclusions contradict a staple finding of the literature on enclosure that enclosure doubled rents or even tripled rents for landlords, since they predict rent changes on enclosure of 60% or less, and that in the long run enclosed land will rent for no more than 33% than enclosed. I consider in the Appendix below how we can reconcile these findings with the **existing** literature. Let me just note here that the major factors making enclosure seem to have more effect on rents than it did were the fact that enclosure took place in a period of general rent increases, that the acre in which open field land was measured tended to be smaller than the statute acre, and that enclosed land was more likely to be free of tithe.

4. MEASURING THE SOCIAL GAINS FROM ENCLOSURE

To measure the true efficiency gains from enclosure I have assembled two data sets. The first is composed of a **data** on the market rents or **the** implied rent **from** the purchase price of pieces of land from 1500 to 1837. The source of this data is The Reports of the Charity Commissioners. 1819-1838. The Charity Commissioners investigated the financial management of most charities in the country. They issued 32 Reports printed in **the**

¹⁹**Indeed** we shall see that **Hoffman** himself notes that the French villages he studied showed a 32% rent gain attributable to enclosure, exactly in line with my numbers for England.

British Parliamentary Papers between 1819 **and** 1838, which comprised about 26,500 pages. As part of their inquiry the Commissioners reported for each charity on the origin and management of their land holdings.

Many of the Charities invested in land, and the Charity Commission reports frequently record the purchase of agricultural land by charities as early as the sixteenth century, and then give information on the current rent of the land, and whether that rent is a market value. Also there is sometimes other **information about** contracts to rent the property at intervening dates. Sometimes they record both the rent and the price of land at the time of purchase or sale. The land is described in varying degrees of detail, but **its** area and location is almost always recorded. Complete information is given on the land use (arable, pasture, meadow, wood, garden, or orchard), whether the land is open-field land (subject to communal **regulations**) or is **enclosed**, what buildings are on the land, and whether the land pays tithe for about 20% of the cases.

The nature of the Charity Commission data allow us to get around the three main problems that I identified as obscuring the long run effects of enclosures on rent, and deal with some other problems. It is important to note that much of the land is observed twice. Information about its status and rental is recorded at the time the commissioners come to the village sometime between 1818 and 1837, and information about its status and rental is given at the time the charity acquired the land.

(1) **The problem of land measure.** Most of the land in the Charity Commission reports has its area reported in statute acres or in acres that can be reduced to statute acres. This is because the commissioners tend to report both the rent and area of the land when purchased and its rent and area when observed by the commissioners **sometime** in the years 1818 to 1837. Thus when we treat these rental observations as single observations for the period 1500 to 1837 we can be confident of the area measurement. But because much of the land has its rental value observed more than once we can also look at the **effects** of enclosure by looking at **differences in rent movements over time on** land that was always enclosed or **always open**, and land that **changed** its status. Again there is no problem of the accuracy of acreage measurements.

(2) **The absence of tithe on much enclosed land.** The absence of tithe payments on enclosed land will tend to inflate the **value** of this land. For land that we observe at an early date in an unenclosed state I take the acreage measurement to be that of the land in the later enclosed state, even though often some of the land would be **given** up to the tithe owner to **exonerate** it from tithe. That is I try to measure the earlier **open** field land on a **tithe**

free basis. **Then** its rent can be compared with enclosed land.

(3) **The re negotiation of rents on enclosure.** **The** rent observations used to compare the rents of open and enclosed land are based on either the purchase price of land or on rents that were freshly negotiated. Thus we can compare market rents with market rents. Also we most frequently observe the rent many years before the enclosure and many years after, so that we can be sure of capturing the full **effects** of the enclosure on long run rental values.

(4) **Common rights.** Both open and enclosed land **often** came with rights of unspecified worth to use some area of common land in the years before enclosure. I can estimate the effective area of land these rights amounted to because I know how much land was later allocated to these plots when the common areas were enclosed.

(5) **Long term effects of enclosure.** **The** Gains to efficiency from enclosure may not come immediately but may arrive gradually as the land is gradually improved after the enclosure. Thus the rent **change at the point of** enclosure may not give the full effects of the enclosure. The charity commission records on the same pieces of land often give its value many years apart. The bulk of the later data on enclosed land is for the period after 1825 by which time **most** of the land would have been enclosed for many years.

Table 1 shows the distribution of all the observations where the enclosure status of the land is given by sub periods. As can be seen there are 14,632 plots where the enclosure status is known. Over time the fraction of the plots observed **that** are at least partly open land falls as we would expect from the record of enclosures in England after 1750. It is estimated that circa 1750 about 21% of the land in England by area was unenclosed. This fits with the fraction of the area in the plots observed **that** were enclosed in 1700-49, which was 22.2%. It suggests that the plots in this sample from the holdings of charities are a reasonably representative sample **of all the land in** England.

TABLE 1

For these observations for each period where we have the market value of the land we can estimate the rent premium on enclosed land compared to open in two simple ways. Because rents were changing greatly over

TABLE 1: SUMMARY OF OBSERVATIONS

Period	Number of observations			
	All	Some Open Land	% open (Obs.)	% open (Area)
1500-1599	63	20	32%	38.9%
1600-49	297	94	32%	36.0%
1650-99	576	192	33%	22.5%
1700-49	987	348	35%	22.2%
1750-99	1010	223	22%	13.4%
1800-14	1270	128	10%	3.9%
1815-24	3898	265	7%	5.3%
1825-37	6531	429	7%	*11.5%
all	14632	1699		

*Half the open land was in three very large parcels of waste land in this period. The ii-action without these two ultra large observations was 6.5%.

this period I normalize rents so that we can pool observations across years by dividing each by an index of rents for each 10 year period. The first test is to just regress the rent per acre (RENT/ACRE) on the fraction of the land **area** which was open (**FOPEN**). The implied percentage increase of **rents** on enclosure is shown in Table 2. As can be seen enclosed land is worth more than open in all periods, and the finding is almost always statistically significant.

Over the whole period the percentage premium on enclosed compared to open is calculated at 30%. The precision of this estimate is high enough that we can say definitely that the gap between open and enclosed is less than 40% **with very high probability. This is in stark contrast to the existing literature.**

This cross section data could hide a number of biases, however. Other things are clearly very important to land values. One is the quality of the soil. In some places open land tended to be “waste” land that was used only as rough pasture. Another thing that is strongly associated with land values is the size of the plot: the larger the plot the lower the rent per acre. Table 2 produces estimates of the cross sectional differences in rents on open and enclosed land which try to adjust for these variations in the underlying “quality” of land. The last column of Table 2 shows the estimated rent **difference** (as a percentage of the rent of open land) when we regress

$$\text{RENT/ACRE} = a + b(\text{LAREA}) + c(\text{FOPEN})$$

where LAREA is the logarithm of the plot area, included as a control variable. As can be seen this does little to change the results, though the estimated rent difference across time periods is more consistent.

To try to adjust for differences in the underlying quality of land in the open and enclosed state I divide up the counties where the observations lie into 3 groups. In the **first** group, the “open” group, more than two thirds of the land that was enclosed before 1836 under Parliamentary enclosure was already **plowland** or meadow before enclosure, and so would be similar in quality to already enclosed land. In the second group, the “mixed” group, the land enclosed by Parliamentary enclosure before 1736 was between one third and two thirds of this cultivated type. **In the last group, the “waste” group,** more than two thirds of land enclosed by **Parliamentary** procedures before 1836 was open waste land. As can be seen the “open” group where open land should be of better quality relative to enclosed land shows less of a rent differential than the “waste” group. The average gap for the open group is estimated at 33% of the rental of open land controlling for size, and 25% not controlling for size.

TABLE 2

Table 2: The Rent Differential Between Enclosed and Open Land

Period	Number of observations		Rent Premium on Enclosed Land (%)	
	All	Some Open Land	Raw Difference	Controlling for plot area
1500-99	40	13	60%	46%
1600-49	252	84	56%	50%
1650-99	489	172	23%	33%
1700-49	846	291	36%	38%
1750-99	760	151	79%	78%
1800-14	1216	127	24%	29%
1815-24	3575	231	39%	51%
1825-37	6017	367	24%	42%
all	13195	1436	30%	37%
“open”	7525	983	25%	33%
“mixed”	1811	143	24%	37%
“waste”	3859	310	47%	51%

Another problem with comparing open and enclosed land in cross section is the possibility **that land use** changed as a result of enclosure. Different uses of land in England had different associated rentals, in part because **they involved different amounts of investment in the fertility of the soil. Arable was the least valuable use of land,** pasture was next (grass which is grazed), followed by meadow (grass which is cut), followed by garden **land. But** if land was switched from one use to another there would have to be a period of investment in improving soil fertility so that the rent gain was not costless. Thus the rent disparities observed above in Table 2 may over or understate the potential social gains from enclosure if enclosure involved land use changes.

The first way to **control** for these elements is to use a more restricted sample of the Charity Commission data where the type of land use is recorded (arable, pasture, meadow, garden, wood), where the number of **farmhouses**, cottages and barns on the land is given. This sample contains 3683 observations, the earliest in 1540 and the latest in 1837. The mean of this **sample** is 1.306, so that plots where the land use is identified tend to be somewhat more valuable plots. The average area of the plots was 16 acres. For this sample I have the following **variables, defined in Table 3.**

TABLE 3

The sample is unrepresentative in terms of the land use types. There is more meadow land than would be the case for the country as a whole, in part because meadow was generally easier to identify as a type of land use. Since most of the sample is drawn for the years after 1800 the sample is representative for the amount of land that **was open. Table 4 shows the simplest regression results with this sample where I use as independent variables just** the fraction of land which was open and the plot area. As can be seen the sample looks similar to the larger **collection of observations on** land rents in this respect. Once we control for land **type**, buildings and tithe status however, the rent premium on enclosed land in cross section becomes much smaller, being only about 12% of the mean rent on open land for the whole period. The premium for the early period separately is about the same at 11%.

The reason is clear **from** the results in Table 4 and **from** the average values of the variables given in Table **3. The land identified as open land is about** half arable, which is a relatively low value use of land whereas enclosed land is less than one quarter arable. Also enclosed land includes such high value uses as garden and

Table 3: Definition of Variables. Charity Commission

Variable Name	Definition	Average value
RENT/ACRE	Rent per statute acre	1.31
LAREA	Logarithm of total plot area	1.76
FARABLE	Fraction of the plot used as arable	0.26
FPAST	Fraction of the plot used as pasture	0.31
FMEAD	Fraction of the plot used as meadow	0.31
FGARD	Fraction of the plot used as garden	0.05
FORCH	Fraction of the plot used as orchard	0.02
FWOOD	Fraction of the plot used as wood	0.02
NHOUSE	Houses per statute acre	0.0006
NCOT	Cottages per statute acre	0.0028
NBARN	Barns per statute acre	0.0011
NTITHE	1 if known to be no tithe, 0 otherwise	0.03
FOPEN	Fraction of the plot open field	0.12
FOPENA	Fraction of the plot open arable	0.06
FOPENP	Fraction of the plot open pasture	0.01
FOPENM	Fraction of the plot open meadow	0.04

orchard. Thus the implied gains from enclosure could be as low as 12% of the value of the land if the higher rents on garden, orchard and meadow land are primarily the result of greater investment in this land

TABLE 4

As was noted much of this data comes from the period after 1800. I have formed a second data set from the Parliamentary Surveys of Crown estates which took place in mainly in 1650. The Parliamentary **Surveys** were conducted on Royal estates throughout the country **after** the Monarchy was abolished in early 1649. Parliament had decided to sell these estates to raise revenue, and wanted the rental value of the property established to set sale prices. The Surveys were seemingly conducted in a highly professional manner. The surveyors frequently valued arable, pasture, meadow, and woodland individually. The values for the same type of land would vary **greatly** within the same county (**Lennard** (19 16), Madge (193 8)). Whether the land was open or enclosed is **generally** evident.

We have to be on guard that Royal estates are not a representative sample of land holdings, but many of the properties valued had been leased on long term leases to a variety of occupiers (as many as a third of the occupiers renting less than 10 acres) so that the management of the land is probably not too unrepresentative of average practice in the period, when much land was occupied by small holders on long leases.

There are 2,715 observations available **in** this data set where both the land use and the enclosure status of the land is given. Table 5 gives the variable definitions and the means of the variables. In this sample all the open field land is cultivated open field. The plots used include only the four land uses arable, pasture, meadow **and** ley, where "**ley**" seems to refer to land which was switched between use as arable and as pasture. The average size of the plot is 12.6 acres. Since the Parliamentary Surveyors would often value the separate parts of a holding **separately** the plot is not **the** unit that was **rented**. In terms of use and enclosure **status** the **sample from the** Parliamentary **Survey** seems more representative of England in 1650 than the Charity Commissioners sample is of the later period. 39% of the land is arable, which is somewhat low, and 35% is open compared to 50% enclosed (the rest is ambiguous), which seems close to the likely overall enclosure share.

TABLE 5

Table 4: Repression Results Controlling for Land Use, Charity Commission

	RENT/ACRE ALL	RENT/ACRE ALL	RENT/ACRE PRE 1750	RENT/ACRE PRE 1750
CONSTANT	1.853	1.711	1.913	2.034
LAREA	-.283 (.011)	-.179 (.012)	-.260 (.0285)	-.212 (.032)
FOPEN	-.411 (.048)	-.147 (.047)	-.402 (.0847)	-.165 (.105)
FARABLE		-.501 (.081)		-.714 (.208)
FPAST		-.097 (.080)		-.306 (.190)
FMEAD		0.016 (.080)		0.006 (.194)
FGARD		1.398 (.100)		0.870 (.605)
FORCH		0.878 (.141)		0.180 (.494)
FWOOD		-.615 (.137)		-.401 (.426)
NHOUSE		1.294 (.581)		2.203 (.896)
NCOTT		0.192 (.176)		-
NBARN		2.460 (.411)		
NTITHE		0.403 (.083)		.407 (.221)
N	3566	3566	581	581
R 2	.151	.307	.142	.206

Table 5: Definition of Variables, Parliamentary Surveys

Variable Name	Definition	Average value
RENT/ACRE	Rent per statute acre (£)	0.60
LAREA	Logarithm of total plot area	1.56
FARABLE	Fraction of the plot used as arable	0.39
FLEY	Fraction of plot used as "ley"	0.02
FPAST	Fraction of the plot used as pasture	0.34
FMEAD	Fraction of plot used as meadow	0.25
FOPEN	Fraction of the plot open field	0.35
FOPENA	Fraction of the plot open arable	0.23
FOPENL	Fraction of plot open ley	0.01
FOPENP	Fraction of the plot open pasture	0.01
FOPENM	Fraction of the plot open meadow	0.10

In estimating the effects of enclosure on land use with this sample I use a separate intercept for each county to control for variations in land measurement across counties, and for variations in soil fertility. This has a modest impact on the estimated coefficient, though the **county** dummies are **often** significantly **different from 0**. I do not report the estimated values of the county intercepts below. Table 6 shows the difference in rental value between open and enclosed land under three **different** specifications. In the first basic specification there are no county dummies.

TABLE 6

The basic regression results suggest that enclosure increased rents by 47%. However, again open land is two thirds arable whereas enclosed land is less than 20% arable, and arable is the least valuable of the land uses. When we control for that by putting in measures of land use the premium for enclosed land is only 29%. Finally if we directly compare enclosed and open arable, pasture and meadow we find the respective premiums to be for arable **36%**, for pasture **31%** and for meadow **23%**. These premiums are not significantly **different** across land **types**.

These cross section results are entirely consistent with those for the Charity Commission data. Enclosed land is worth more than open, but the raw premium is reduced greatly if we allow for the fact that enclosed land was more commonly of the higher value land use types, which acquired their higher value in large part from **greater investment in soil fertility**.

Returning to the Charity Commission data we can do another test for the effects of enclosure which uses the fact that we observe many pieces of land more than once. Here we can compare what happens to the rent of land when between observations the enclosed area increases. This controls for possible differences in quality **between open and enclosed land. But it does count as a gain from enclosure changes in land use subsequent to** enclosure, where these changes may involve greater investment in soil fertility.

Suppose we knew the market rent of a plot in 1700 and in 1825. Suppose also that it was enclosed in 1760. We would expect that if enclosure was undertaken to **free** landlords from leases that undervalued rents in 1760 that the rent on this plot would not move any differently in the long run than that on a plot which was either always enclosed or always open. Thus we can use the panel nature of the data set to measure the **efficiency** gains

Table 6: Regression Results, Parliamentary Surveys. 1650

	RENT/ACRE	RENT/ACRE	RENT/ACRE
CONSTANT	.762		-
LAREA	-.057 (.0095)	-.039 (.0094)	-.042 (.0095)
FARABLE	-	0.547 (.052)	0.565 (.059)
FLEY	-	0.647 (.098)	0.509 (.263)
FPAST		0.809 (.038)	0.826 (.038)
FMEAD	-	1.109 (.046)	1.100 (.055)
FOPEN	-.215 (.027)	-.153 (.037)	-
FOPENA	-		-.131 (.053)
FOPENL	-	-	0.004 (.287)
FOPENP	-	-	-.181 (.117)
FOPENM	-	-	-.193 (.059)
N	2715	2715	2715
R ²	.035	.188	.194

from enclosure while avoiding both the selection-bias problem that **only** land of poorer quality or land more badly managed **may** remain unenclosed, and the problem that rents observed just before enclosure may be ^{below} **market**.

Formally what I do is assume that the rent of a piece of **land** i , at time t is,

$$R_{it} = Z_t \cdot U_i \cdot D_{it} \cdot E_{it}$$

where Z_t is the underlying index of market land values, U_i is the “quality” of this **plot**, D_t is the **effect** of **land being** open at time t , and E_{it} is normally distributed with $E(E_{it}) = 0$, and $E(E_{it} \cdot E_{iT}) = 0$, $t \neq T$. **This** assumes that land rents at any time are log normally distributed, which is close to correct for samples of the land rent data.

With these assumptions, denoting logs with **small** letters,

$$r_{it} - r_{i0} = (z_t - z_0) + b \cdot (d_{it} - d_{i0}) + (e_{it} - e_{i0}) .$$

where $d_{it} - d_{i0}$ is the change in the fraction of land that is open between the time periods. That is, the relative rents on the same plot between two periods can be decomposed into the underlying overall movement of rents, and the gains to enclosure in each period, together with a **normally** distributed error term. If we regress the **difference** on the logarithm of rents with a dummy variable equal to 1 in year t , and -1 in year 0, and also a variable equal to the fraction of the land which was enclosed between observations then the **coefficients** on **these** dummy variables show the movement of underlying rents and the rent discount on open land at the various **dates**. i.e. we regress,

$$r_{it} - r_{i0} = \sum a_j G_j + \sum b H_j$$

where $G_j = 1$ if $j = t$, $G_j = -1$ if $j = 0$, otherwise $G_j = 0$. And $H_j = 1$ if $j = t$ and the land is open then, $H_j = -1$ if $j = 0$ and the land is open then, and otherwise $H_j = 0$. The estimated value of b will show the percentage effects of enclosure on rents, since we estimate in logs.

For **this** estimation we can get 3954 pairs of observations from the Charity Commission data. The **estimated** value of b , the discount on open land **is** **-.285**, with a standard error of only **.0287**. This corresponds to

land that is completely enclosed being worth 33% more than land that is completely open. In the Charity Commission data land that was enclosed increased in rent by 33% more than the rental value of land always enclosed or always open.

Table 7 summarizes the results of these various tests of the effects of enclosure on rents.

TABLE 7

The numbers in Table 7 tell a reasonably consistent story. The long term rent gains from enclosure were far more modest than McCloskey and others assumed in assessing the efficiency of open field agriculture. A reasonable value for the increase in rents would seem to be in the order of 30%. There was thus little social gain from enclosure.

Confirmation that enclosure did not double rents in the long run comes if we look at the mass of data in Table 1 at the county level. We know that the amount of enclosure for different counties in England varied greatly in the period 1740 to 1836. Some counties saw more than 50% of the land enclosed, others 0%. If enclosure boosted rents by 100%, as is often claimed, then if we look at the rent rise from circa 1700 to circa 1825 for each county it should be associated with the extent of enclosure. Indeed if R_{i0} is the rent in county i in the first period, R_{i1} the rent in county i in the later period, E_0 is the average rent of enclosed land in the first period, E_1 the average rent of enclosed land in the later period, and $FENC_i$ the fraction of each county enclosed between 1740 and 1836 then we should find,

$$\frac{R_{i1}}{R_{i0}} = \frac{E_1}{E_0} \frac{1}{(1 - 0.5 FENC_i)} \varepsilon_i$$

where ε_i is an error term for each county. That is if none of the land in a county was enclosed in this period its rent rise should be the same as that on enclosed land. But if all of a county was enclosed then its rent rise should be double the average rent rise.

Figure 2 shows R_{i1}/R_{i0} for the 42 English counties. As can be seen there is no sign of any association of a greater rent increase with a larger amount of the county enclosed between 1740 and 1836. Indeed when we

Table 7: Summary of Effects of Enclosure on Rents

Data	Type	Raw Difference	Controlling for Land Use	Controlling for Land Quality
Charities	All Land Pre 1750	30%	12 % 11 %	33 %
Parliamentary Survey 1650	All Land Arable Pasture Meadow	47 % •	29% 36% 31% 23%	

estimate the parameters a and b in the expression

$$\frac{R_{i1}}{R_{i0}} = \frac{a}{(1-b FENC_i)} \varepsilon_i$$

by minimizing the sum of squared errors the estimate for b, the fraction by the rent of open land falls below enclosed we get an estimate of .03. That is the discount is estimated at only 3%. The standard error on this estimate is .26, so the estimate is very imprecise. All we can say is that this test shows that there less than 1 chance in 10 that the rent of open land was only 50% of that on enclosed.

FIGURE2

5. THE PRIVATE INCENTIVE TO ENCLOSE

Enclosure was not it seems of great social value. Why then is it generally reported that rents doubled on -enclosure? The answer may be that it can be quite correct that per acre rents doubled, but it is quite incorrect to assume that meant landlords permanently got double the rent they would have received without enclosure.

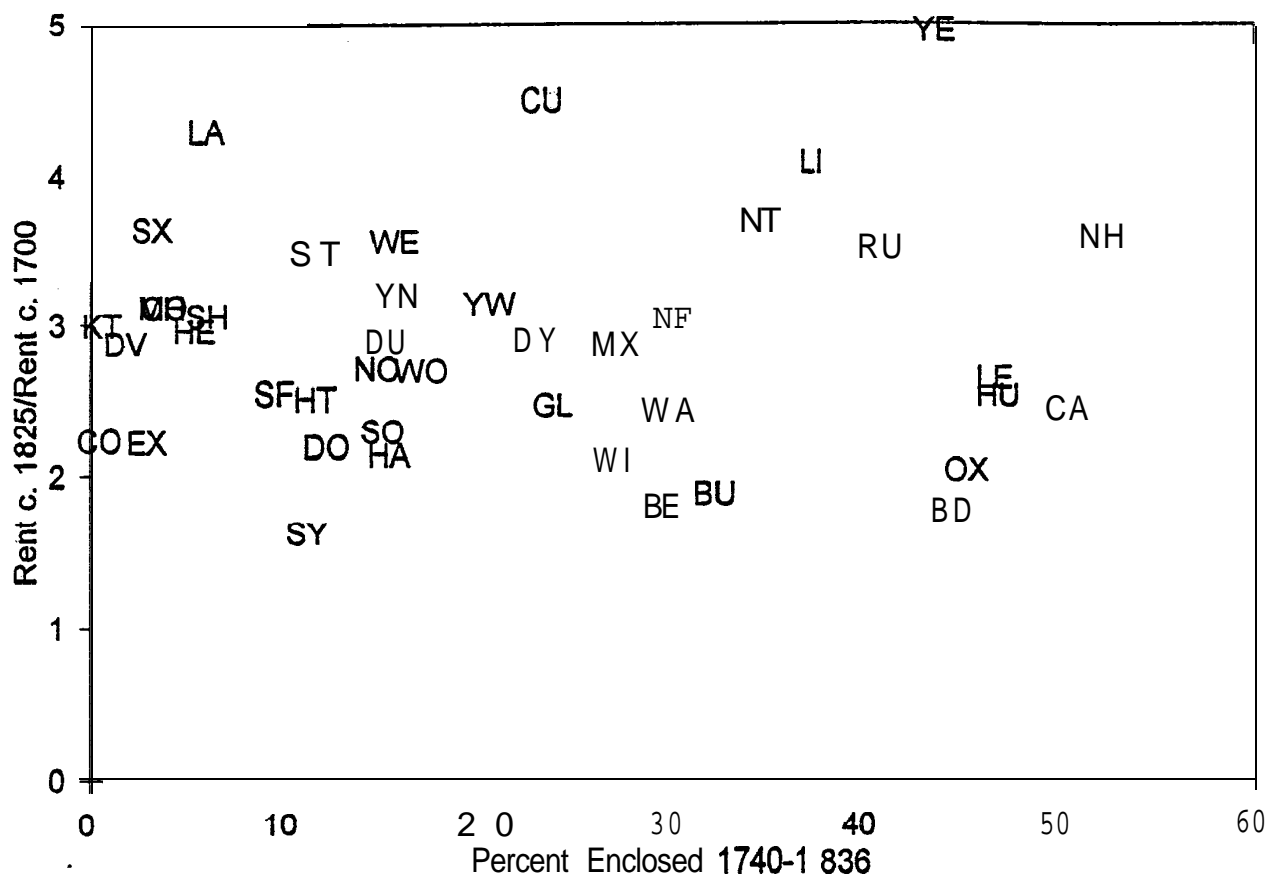
Rents per statute acre would rise as the product of three forces: as long term gain in land value, a short term gain from re negotiating leases, and a gain from ending the tithe. But only the first gain would necessarily have gone to the landlord, and the gain from ending the tithe would be completely offset by a reduction in acreage. Under Parliamentary Enclosure, and sometimes with private enclosures, the tithe holder would take land in lieu of the tithe right. For arable they would receive up to 1/5 of the land, as well as having their property fenced at the expense of the other owners. Thus the increase in rent per acre in part represented the inclusion in the new rents of the tithe burden that the owner had exonerated the land from.²⁰

The biases from re negotiation of rents, plus abolition of tithe, can easily make a real change in rents of

²⁰Arable tithe free would rent for up to 25% more than that burdened with tithe, for pasture and meadow the premium was 14-17% (Evans (1976, pp. 99-100)).

FIGURE 2: THE EFFECTS OF ENCLOSURE ON RENT INCREASE

ENGLAND, 1700 TO 1825



33% into an apparent change in rents of 108%. Thus,

	percentage change in rent upon enclosure
long term rent gain	+33%
ending of tithe	+17-25%
re negotiation of leases	+20%
changes in acre measurement	+?
=> apparent rent rise	95-108%

Hence modest market rental value increases that I **find** could easily get reported as larger increases if rent is simply given as “rent per acre.” This means that extreme caution has to be used to judge whether the landlord really gained a permanent increment of 100% in the rent per acre.

When comparing open and enclosed land a further complication is that the acre was a very non-standard measure even in the 1830s. In particular open field land tended to be measured in “field acres” which were typically only .5 to .75 of a statute acre. Enclosed land was more likely to be measured in statute acres. This will **inflate** the value of enclosed land. This problem may explain why Allen consistently finds enclosed pasture to be worth double the value of open pasture. In the Parliamentary Surveys the statute acre seems to have been widely used, and in the case of the Charity Commission data we generally know the area in statute acres.

The accepted generalization that rents per acre for landlords doubled upon enclosure is based on surprisingly weak sources. When these are examined in detail, as in the Appendix, they turn out to not show a doubling of rents in almost all cases. In fact the small amount of hard evidence is consonant with the small rent increases I report above.

6. THE NET BENEFIT FROM ENCLOSURE

Suppose the gain **from** enclosure is aR , where R is the rent per acre. We have observed that there seems to be a fairly constant gain of about 33% of the rental value of land between 1500 and 1837 (see table 2). **Table 8 shows the gains** per acre **from** enclosure **from** 1760 to 1839, by **decade**. It also shows an estimate of the **enclosure** costs per acre **from** the work of Brian Holderness, where the enclosure cost included the costs of fencing, and roads, and some drainage work.

The gross return **from** enclosure over this period averaged 6.1% compared to a cost of borrowing on bond or mortgage that averaged 4.6%. Thus the net gain **from** enclosing to the land owner over this period averaged **1.5%** of the **capital** Invested. This works out to be an **efficiency gain from enclosure of 2%, if all** of the remru above the interest cost of capital is to **be** counted as economic surplus. Since in fact enclosure had risks (the rent gain was variable as were the costs of the enclosure) the true efficiency gain will be even lower than this since land owners had to be compensated for these risks. Thus there is no evidence that open fields in England were an inefficient institution.

TABLE 8

We can also explain the delay in enclosing much of the land until the nineteenth century when it was known that enclosed land was of higher value from at least the sixteenth century. For an important element in the decision to enclose will be the cost of capital, since these are perpetual investments. The cost of capital in England in the 13 th century was about 10.5% for risk free long term lending. This cost fell to about the rate of 4.5% in the eighteenth and nineteenth centuries in two distint phases. The **first fall** occurred between 1350 and 1400 when rates of return fell **from** 10% to 5%. The cost of capital then stabilized at about this level till the late 16th century when it climbed to about 6%. It declined **from** this rate to about **4%** between 1 **680 and** 1730 Assuming the other costs did not vary this implies that if there is a variation in the relative costs and **benefits** from enclosure at **different** locations we might see a long drawn out process of enclosure between 1400 **and** 1815 as was in **fact** observed in part just **from** the secular decline of this important cost **element**.²¹

²¹**For** the rate of return on capital see Clark (1988), and Clark (1993).

TABLE 8 : COSTS AND BENEFITS OF ENCLOSURE, 1760-1837

Period	Rent Gain (£/acre)	Enclosure Cost (£/acre)	Gross Return	cost of Capital	Net Return
1760-9	.176	2.36	7.5%	4.1%	3.4%
1770-9	.197	3.46	5.7	4.3	1.4
1780-9	.227	3.46	6.6	4.6	2.0
1790-9	.276	5.05	5.5	4.7	0.8
1800-9	.361	6.27	5.8	4.8	1.0
1810-9	.511	6.35	8.0	4.8	3.2
1820-9	.405	7.70	5.3	4.7	0.6
1830-9	.343	7.56	4.5	4.7	-2
average			6.1		1.5

Note: Enclosure costs from Holderness (1988), pp. 19-21. Cost of borrowing on bond or mortgage from Clark (1993), Table 4.

7. MODERN IMPLICATIONS

There are of course many dissimilarities between the agrarian situation in preindustrial **Europe** and that in modern **Africa**. But it is undeniable that the supposed lessons of European agrarian development have **informed** much of the thinking of modern agrarian reformers. Contrary to the established wisdom the English **experience** does not show that there were great social gains from the enclosure of communal agriculture, but that these gains were long delayed by the problem of re **negotiating** property rights. Instead the gains were modest, and the social costs of not reforming agriculture before 1837 would have been minor. Also landowners seem to have been quite responsive to modest profit opportunities offered by ending the communal agrarian system. Part of the reason why the losses from communal agricultural systems were small is that these systems were adaptive themselves, and evolved to limit **efficiency** losses from externalities and communal constraints.

The implication of this for modern agrarian reformers is that there can be no presumption that communal property rights in **Africa** are imposing large social losses. There seems to be little empirical evidence of the supposed losses from these institutions in **Africa**. There is no evidence from European experience to show that these institutions continue when they impose large social costs. Before devoting government resources to **reforming** land tenure and eliminating communal property there needs to be serious demonstration that the institution does have pernicious effects in Africa.

APPENDIX: EARLIER EVIDENCE ON THE INCREASE IN RENTS UPON ENCLOSURE

As **McCloskey** (1989) points out in his **survey** of the evidence on rent increases upon enclosure that as early as the late eighteenth century the doubling of rents on enclosure became a conventional view. The **first wide** spread quotation of the doubling of rents on enclosure comes **from** some of the county surveys of agriculture published by the Board of Agriculture between 1793 and 1814. These quotes are the estimates of **contemporary** “experts” on agriculture so they should have some evidentiary value. But as a guide to the true long term rent gain from enclosure these estimates, even when given by contemporaries, are of little value because of the various compounding factors listed above. They do not address the issue of tithes or of lease re negotiations, and they do not deal with the **fact** that quoted enclosed and open field rents can be for different dates when the general **rent** level has changed. **McCloskey** quotes this contemporary opinion as supporting the idea that enclosure doubled rents. But in only two of the cases he quotes **can the year the enclosed and open rents are being compared be inferred** with certainty. In the case of Queensborough in Leicester the rent rise was **92-130%** between the open fields in 1793 and the enclosed fields in 1809. After deducting the general rise in rents we are **left** with a gain of **23-47%**. In **Enfield** in Middlesex rents rose 33% between the open fields in 1803 and the enclosed fields in 1805, but this is only **a 25% gain** after deducting the general rent **movement**.²²

Note that while some contemporary observers such as Young believed that enclosure doubled rents others quite carefully laid out figures that contradict the idea that enclosure doubled the market value of land. Parkinson, one of the authorities that Allen relies upon to show that open land was almost as efficient as enclosed, quotes rents on open and enclosed land in **Rutland** and Huntingdon as follows,

	% gain (gross rents)	% gain (both tithe free)
heavy arable district	+75%	+25%
light arable district	+51%	+23%
pasture district	+51%	+40%

As can be seen Parkinson’s gross rent change figures are less than the generally accepted figure, and the net change

²²**McCloskey** (1989), p. 17.

in rents is much more like my figures.²³

Thus the comments of the contemporary observers are largely worthless as a guide to the effect of enclosure on the long run rental of land. They either failed to allow for the compounding factors that made enclosure look to the casual observer as though it profoundly affected the value of land, or they were making a case for enclosure as not just a good thing in general, but as also a profitable thing for all landlords to pursue.

In modern times the popularity of the idea that enclosure doubled rents seems to owe much to Gordon Mingay, a noted and widely respected agricultural historian. In his 1963 work, English Landed Society in the Eighteenth Century he notes that,

Exceptionally, rent increases of three- or even four-fold were achieved in the late eighteenth century, but probably a doubling of rents was much nearer the average (p. 183).

There are no specific instances given in this text, however, of individual rent increases. Later Chambers and Mingay state, but again without specific instances, that

perhaps a doubling of rents, from about 7s to 15s per acre was the common result of enclosure in the Midlands (Chambers and Mingay (1966, p. 85)).

The next person to assert the “doubling” of rents as a generalization is Donald McCloskey.

A rough average from the great variety of sources that give statistics on rents is a doubling of rents per acre after enclosure (McCloskey (1972), p. 33)

But as before he gives no details, though he does acknowledge that we have to be careful to allow for the fact that enclosure terminated existing leases.

Chronologically the next discussion of the effect on rents of enclosure is Yelling (1977). He cites the figures given by Arthur Young in 1808 in his General Report on Enclosures, implying that enclosure raised rents by 90% in Warwickshire, 150% in Leicester, and 74% in Northamptonshire. We have already seen how uninformative these reports are. Yelling also quotes as sources for this figure of doubling of rents Chambers and Mingay (1966), and McCloskey (1972)!

As noted above Purdum in a study of 5 villages in Nottingham enclosed between 1787 and 1796 reports

²³Figures from Allen (1993), pp. 176-7.

from estate records that rents per acre increased between 58% and 300% on enclosure. Four of these manors had been exonerated from tithe by the 1830s, most likely at the time of enclosure so these rent increases per acre **will** be overstated by the tithe exoneration. Purdum asserts that **all this rent increase was an increase in the market value of the land because "All five of the manors studied appear to be on annual tenancies."**²⁴ Purdum's study seems exactly the kind of study needed to establish the **true** profitability of enclosure to the landlord. If all the land **is** on **annual** tenancies then the rent rise on enclosure will be close to the true long **run** effect of enclosure on rents. Also since Purdum looks at the aggregate rent for the estate in each village changes in the measurement of land, and in the tithe status of land should not effect the calculation. Purdum's claim that all the land "appeared" to be on annual tenancies implies, however that he does not know this is true. Indeed if his source was simply the estate accounts which give a list of tenants for each part of the estate and the rents they paid (as is common) then he would have no way to know what the length of tenure was. The aggregate rent might change each year, but that could be because different rental contracts came to an end each year. A sample of 220 tenancies from the Charity Commission data that started in the period 1780 to 1799 where the term of the tenancy was known shows only 10% were **annual** tenancies. Thus the Purdum evidence is on its face highly suspect.

The next source which quotes the doubling of rents on enclosure is Michael Turner, English Parliamentary Enclosure (1980).

Examples abound which show this rise of rent upon enclosure, sometimes doubling, sometimes trebling (p. 99).

But the four specific examples he gives in this source are highly ambiguous on the true long term and short term rent gain. He cites the work of T. W. **Beastall** using the rent roll of the Scarborough estates in Lincolnshire, showing large rent increases upon enclosure. But in fact the cases in this book generally involve land being **improved not just by enclosure alone, but also by investments in drainage and farm buildings. And even then the** true rent increases as a result of both the enclosure and the other investments were much less than a doubling. For example, Wharton and Blyton were enclosed and improved from 1796 to 1805. Rents rose by 183% **from** 1791 to 1811. But the rise net of general rent increases was **only** 62%. The return on the capital invested, part of which

²⁴Purdum (1978), p. 319.

was borrowed at 5%, was thus 6.14%. This is hardly an advertisement for huge gains from enclosure.²⁵

Turner also notes that in the Buckingham village of Princes l&borough in the late eighteenth century old enclosed arable let for 18 shillings per acre, old enclosed pasture for “up to” 30 shillings, and open field lands for only 14 shillings. What does this imply about the long term rent gain from enclosure? It could be as little as 29%, depending on the use enclosed land was put to. Turner also cites Young as suggesting that in 1766-7 enclosed land was worth double the value of open field land, but we have already dealt with the value of Young’s evidence. Lastly Turner cites the work of Purdum.

Subsequent work by Turner in 1981 and 1984 produces few further specific and clear instances where farmers rents were increased by 100%. Turner (1984) in a nice survey of the enclosure issue quotes six sources in support of the contention that there were great rent increases from enclosure. In addition to the sources cited in Turner (1980) he gives the projections of two landowners in Buckingham, one in 1775 and the other in 1797-8, that their rents would rise respectively by 70% and “nearly 50%” on enclosure (this being a time of general rent increases on land already enclosed).²⁶ He also cites the enclosure of Bow Brickhill when two small plots were sold unfenced during the enclosure for £128 and then resold in 1798 fenced for £400. But this is comparing enclosed land unfenced with enclosed land.²⁷ Another new example is the parish of Napton in Warwick where the land valuations for the whole village recorded in the rate books of the Parish Overseer rose by 206% from 1735 to 1779 after the enclosure (from Martin (1967). p. 29). Now in this period rents as a whole in England rose by 73%. so the gain from enclosure per se would actually be only 77%. But the rate books of the overseers are not a particularly direct observation of market land values.²⁸

Blum (1981) is emphatic that rents doubled or tripled on enclosure, and that this is incontestable. As

²⁵Beastall (1975), p. 90. Beastall gives two other instances of joint enclosure/improvement schemes where the rent rise attributable to the joint enclosure/improvement can be calculated. The rent increases were respectively --% and --% (pp. 90-91).

²⁶Turner (1981), p. 247, Turner (1984), p. 45.

²⁷Turner (1981), p. 47.

²⁸Martin (1967), p. 29.

evidence he points to the Board of Agriculture reports, Chambers and Mingay (1966), McCloskey (1972), Martin (1967), Grigg (1966), and Kerridge (1959). We have already dealt with the first four sources. Grigg on the page cited, writing of **Lincolnshire** notes that, “rent was increasing most in the areas which had been recently enclosed and **drained....**On the Heath there were some staggering rental increases **after** enclosure. A parish near **Sleaford** which had been valued at **£223** in 1771 was rented at **£3000** in 1824, and there were other equally striking examples.” But Grigg is not citing a **primary** source. Instead his source for this astounding rent increase is **John Creasey, Sketches Illustrative of the Topography and History of New and Old Sleaford**, published in 1825. Kerridge notes that “Farm rentals, which before enclosure might have been from **£15** to **£40**, rose to from **£100** to **£400** after enclosure.” The references given are to a variety of secondary sources **from 1805 to 1867**.

McCloskey (1989) attempts the first large scale survey of the evidence of rent increases on enclosure. He cites two main types of sources. The Board of Agriculture Reports, which we have already dealt with, and a variety of estate surveys. Table 8 gives an **evaluation** of the rent increase on enclosure revealed by each of these estate surveys, where the evidence is clear.

TABLE 9

As can be seen the **specific** instances cited by McCloskey have an average rent increase of only **41%**, though the variation is so great in the estimates that these numbers are consistent with rents doubling after enclosure, or with rents decreasing after enclosure. They are simply not very strong evidence of anything.

Kerridge (1992) argues that enclosure raised rents by substantial amounts for a variety of reasons. Thus “Rental values sometimes trebled after **enclosure....Division** and enclosure in the plain countries (sic) led to great **rent increases.....The rents of enclosed farms were often double those of common field ones; but then the latter** were tithable and the former tithe free.” (p. 99).

But again all the citations are to contemporary experts or to Yelling (1977).

Allen (1994) also holds that enclosure doubled rents, and cites the examples of rent in the south Midlands given in Allen (1988). At least we seem to have real data on the market rents of open and enclosed land Allen (1988) unfortunately does not give any indication of the sources for these quotations other than to record that they

Table 9: Estate Evidence on the Increase in Rents Upon Enclosure cited by McCloskey

Source	Initial Year	Final Year	% Rent increase	Gainminus general rent increases	Further corrections required
Broad (1973)	1646	1654	53-123%	53-123%	?
Swann (1964)	1747	1777	50%	12.2%	no
Swann (1964)	1747	1780	33.3%	-4.1%	no
Swann (1964)	1747	1783	20%	-17.5%	no
Ellis (1972)	1781	1801	28%	-15.0%	?
Walton (1975)	1773	1777	72.7%	69%	yes
Swann (1964)	1796	1802	233.3%	184.7% ?	
Swann (1964)	1794	1801	136.6%	98.6%	no
Swann (1964)	1753	1774	2.9%	-16.4%	no
Swann (1964)	1753	1789	59.1%	+3.4%	no
Fowler (1928)	1759	1781	85.9%	+45.1% ?	
average			74%	41%	
standard error			65%	64%	

Source. McCloskey (1989), pp. 16-20.

were “drawn **from** estate surveys, rentals, and valuations • both in manuscript and as **summarized** in the Victoria **County** Histories and the secondary literature.” Here the trail goes cold.

What we see **from** the above is first that there is little **evidence** in the literature to **contradict the** view **that** the long term gain **from** enclosure was a 33% rise in rents. Thus the private gains from enclosure were **in line with** the social gains. Consequently enclosure was a matter of modest profits.

The Sources of the Data Sets

Charity Commission

Great Britain, Parliamentary Papers (1819), Reports of the Charity Commissioners. Vol. 1. Vol. X-A.

Great Britain, Parliamentary Papers (1819), Reuorts of the Charity Commissioners. Vol. 2. Vol. X-B.

Great Britain, Parliamentary Papers (1820), Rewrts of the Charity Commissioners. Vol. 3. Vol. IV.

Great Britain, Parliamentary Papers (1820), Reuorts of the Charity Commissioners. Vol. 4. Vol. V.

Great Britain, Parliamentary Papers (1821), Reports of the Charity Commissioners. Vol. 5 Vol. XII.

Great Britain, Parliamentary Papers (1822), Reuorts of the Charity Commissioners. Vol. 6. Vol. IX.

Great Britain, Parliamentary Papers (1822), Reuorts of the Charity Commissioners. Vol. 7. Vol. X.

Great Britain, Parliamentary Papers (1823), Reports of the Charity Commissioners. Vol. 8. Vol. VIII.

Great Britain, Parliamentary Papers (1823), Reports of the Charity Commissioners. Vol. 9. Vol. IX.

Great Britain, Parliamentary Papers (1824), Reports of the Charity Commissioners. Vol. 10. Vol. XIII.

Great Britain, Parliamentary Papers (1824), Reports of the Charity Commissioners. Vol. 11. Vol. XIV.

Great Britain, Parliamentary Papers (1825), Reports of the Charity Commissioners. Vol. 12. Vol. X.

Great Britain, Parliamentary Papers (1825), Reports of the Charity Commissioners. Vol. 13. Vol. XI.

Great Britain, Parliamentary Papers (1826), Reuorts of the Charity Commissioners. Vol. 14. Vol. XII.

Great Britain, Parliamentary Papers (1826), Reports of the Charity Commissioners. Vol. 15 Vol. XIII.

Great Britain, Parliamentary Papers (1826-7), Reports of the Charity Commissioners. Vol. 16. Vol. IX.

Great Britain, Parliamentary Papers (1826-7), Reuorts of the Charity Commissioners. Vol. 17. Vol. X.

Great Britain, Parliamentary Papers (1828), Reports of the Charity Commissioners. Vol. 18. Vol. X.

Great Britain, Parliamentary Papers (1828), Reports of the Charity Commissioners. Vol. 19. Vol. XI.

Great Britain, Parliamentary Papers (1829), Reports of the Charity Commissioners. Vol. 20 Vol. VII.

Great Britain, Parliamentary Papers (1829), Reuorts of the Charity Commissioners. Vol. 21. Vol. VIII.

Great Britain, Parliamentary Papers (1830), Reuorts of the Charity Commissioners. Vol. 22. Vol. XII.

Great Britain, Parliamentary Papers (1830), Reports of the Charity Commissioners. Vol. 23. Vol. XII.

Great Britain, Parliamentary Papers (183 1), Reports of the Charity Commissioners. Vol. 24. Vol. XI.

Great Britain, Parliamentary Papers (1833), Reports of the Charity Commissioners. Vol. 25. Vol. XVIII.

Great Britain, Parliamentary Papers (1833), Reuorts of the Charity Commissioners, Vol. 26. Vol. XIX.

Great Britain, **Parliamentary** Papers (1834), Reports of the Charity Commissioners, Vol. 27. Vol. XXI.

Great Britain, Parliamentary **Papers** (1834), Reuorts of the Charity Commissioners, Vol. 28. Vol. XXII.

Great **Britain**, Parliamentary Papers (1835), Reports of the Charity Commissioners, Vol. 29. Vol. XXI.

Great Britain, Parliamentary Papers (1837), Reuorts of the Charity Commissioners, Vol. 30. Vol. XXIII.

Great Britain, Parliamentary Papers (1837-8), Reuorts of the Charity Commissioners, Vol. 3 1. Vol. XXIV.

Great Britain, **Parliamentary** Papers (1837-8), Rewrts of the Charity Commission&s, Vol. 32, Part 1. Vol. XXV.

Great Britain, Parliamentary Papers (1837-8), Reports of the Charity Commissioners, Vol. 32, Part 2. Vol. XXVI.

Great Britain, Parliamentary Papers (1837-8), Reuorts of the Charity Commissioners, Vol. 32, Part 3. Vol. XXVII.

Great Britain, Parliamentary Papers (1839), Reuorts of the Charity Commissioners, Vol. 32, Part 4. Vol. XIV.

Great Britain, Parliamentary Papers (1839), Reuorts of the Charity Commissioners, Vol. 32, Part 5. Vol. XV.

Great Britain, **Parliamentary** Papers (1840), Reports of the Charity Commissioners, Vol. 32, Part 6. Vol. XIX.

Parliamentary Surveys of Crown Lands

All from the Public Record **Office**, London.

ENGLAND: Cumberland #2 (Carlisle), Cumberland #6 (**Holme** Cultram), Cmnberland #8 (**Penrith**), Derby #19 (**Eckington** Moor), Derby #28 (**Wirksworth** Moor), Derby #30 (Youlgreave), Dorset #5 (**Fardington** Manor), Dorset #9 (Long **Bredy** Manor), Dorset #15 (**Ryme** Intrinsica Manor), Essex #17 (**Westham** Manor), Hereford #9 (Clifford Parish), Hereford #16 (**Kingsland** Manor), Hereford #19 (**Marden Manor**), Leicester #13 (Over Holy Oakes), Lincoln # 20 (Hoysthorpe Manor), Lincoln # 23 (**Langton** juxta Horncastle Manor), Lincoln # 26 (Moulton Harrington Manor), Lincoln # 27 (Moulton Dominorum Manor), Lincoln # 32 (**Spalding Manor**), **Middlesex** #17a (**Enfield Manor**), **Middlesex** #29 (**Halford Manor**), Monmouth #1 (**Caldicot**), Monmouth #9 (Whitecastle), Norfolk #18 (West Walton, Walsoken, Emneth and Tilney Manors), Norfolk #19 (**Wyndham** Manor), Northampton #15 (Aldrington Manor), Northampton # 16 (**Ashton** Manor), Northampton #21 (**Grafton** Parish), Northampton # 26 (Green's Norton), Northampton #29 (Grimscothe in Cold **Higham**), Northampton #32 (**Higham Ferrers**), Northampton # 35 (**Holdenby**), Northampton #38 (Kings **Cliffe**), Northampton # 46 (Stoke Brueme), Northampton #48 (**Little Weldon**), Nottinghamshire #19 (**Newark**), Oxford #12 (**Woodstock/Wootton**),

Somerset **#21** (English **Combe**), Somerset **#26** and **#27** (**Laverton**), Somerset **#32** (Midsomer Norton and **Welton** (or Welverton)), Somerset **#33** (Milton Falconbridge in **Martock**), Somerset **# 39** (Stratton on the Fosse), Somerset **# 42** (**Welton** alias Welverton in Midsomer Norton), Somerset **#44A** (West Harptree), Somerset **#45** (**Widcombe**), Suffolk **#14** (St Edmuuds in Brundish), **Suffolk # 15** (Eye Hall or Priory), **Stafford #44** (**Hanbury**), Surrey **# 38** (East **Molesey**), Surrey **# 55** (Walton **upon** Thames), Surrey **# 56** (Walton **upon** Thames), Surrey **# 67** (**Weybridge**), **Wiltshire #40** (Mere), Wiltshire **#43** (Mere), Yorkshire **#23** (**Skeffling**), Yorkshire **#28** (**Hornsea** in **Holderness**), Yorkshire **#35** (**Meaux** Abbey), Yorkshire **#39** (**Scalby**), Yorkshire **#50** (**Rosedale** in Pickering)

WALES: **#8** (**Llanfigan**), Cardigan **#4** (Gwynionidd Iskerdyn), Cardigan **#5** (**Tredroyre** and **Penbryn**), Carmarthen **#18** (Talky), Denbigh **#3** (**Denbigh**), Merioneth **#2** (**Penllyn**), Radnor **#4** (**Knighton**)

BIBLIOGRAPHY

- Allen, **Robert C.** 1982. "The Efficiency and Distributional Consequences of Eighteenth Century **Enclosures**," Economic Journal, 92, pp. 937-953.
- Allen Robert C. 1988. "The Price of Freehold Land and the Interest Rate in the Seventeenth and Eighteenth Centuries," Economic History Review, **41**, pp. 33-50.
- Allen, Robert C. 1992. Enclosure and the Yeoman. Oxford: Oxford University Press.
- Allen, Robert C. 1994. "Agriculture During the Industrial Revolution," in **Roderick Floud** and Donald **McCloskey** (eds.), The Economic History of Britain Since 1700. Second Edition, Vol. 1.
- Allen, Robert C. and **O'Grada, Cormac**. 1988. "On the Road Again with Arthur Young: English, Irish, and French Agriculture **during the** Industrial Revolution," Journal of Economic History, **38** (1988), pp. 93-116.
- Ault, Warren O. 1972. Open-Field Farming in Medieval England. London.
- Barrows, Richard and Michael Roth, 1990. "Land Tenure and Investment in **African** Agriculture: Theory and Evidence," The Journal of Modern African Studies, **28**, pp. 265-297.
- Beastall, T. W. 1975. A North **Countrv** Estate: The Lumleys and Saundersons as Landowners, 1600-1900. Chichester: Phillimore.
- Bloch**, Marc. 1966. French Rural History. Berkeley: University of California Press.
- Blum**, Jerome. 1978. The End of the Old Order in Rural **Europe**. Princeton: Princeton University Press.
- Blum**, Jerome. 1981. "Review Article. English Parliamentary Enclosure," Journal of Modern **History**, **103**, pp. 477-504.
- Chambers, J. D. and Mingay, G. E. 1966. The **Agricultural** Revolution. 1750-1880. London: Batsford.
- Chapman, J. 1987. "The Extent and Nature of Parliamentary Enclosure," Agricultural History Review, **35**, 25-35.
- Clark, Gregory. 1988. "The Cost of Capital and Medieval Agricultural Technique," Explorations in Economic **History**, **25**.
- Clark, Gregory. 1994. "The English Private Capital Market, **1730-1837**" Paper presented at the Cliometric Society Conference. Tucson. AZ.
- Cohen, Jon and Martin Weitzman. 1975. "A **Marxian** Model of Enclosure." In European Peasants and Their Markets. Essays in Agrarian Economic History, W. N. Parker and E. L. Jones (eds.). Princeton: Princeton

University Press.

Cutler, W. H. R 1920. The Enclosure and Redistribution of Our Land. Oxford: Clarendon Press.

Dahlman, Carl. 1980. The Open Field System and Beyond. Cambridge: Cambridge University Press.

Demsetz, Harold. 1967. "Toward a Theory of Property Rights," American Economic Review, **57**, 347-59.

Dorner, Peter. 1972. Land Reform and Economic Development. Harmondsworth, England: Penguin.

Duggan, William R 1986. An Economic Analysis of Southern African Agriculture. New York: Praeger.

Evans, Eric. 1976. The Contentious Tithe. London: Routledge and Kegan Paul.

Fenoaltea, Stefano. 1988. "Transactions Costs, Whig History, and the Common Fields," Politics and Society, **16**, 171-241.

Gonner, E. C. K. 1966. Common Land and Enclosure. New York: Kelley Reprint.

Grantham, George. "The Persistence of Open Field Farming in Nineteenth Century France," Journal of Economic History, **40**, pp. 515-531.

Grigg, David. 1966. The Agricultural Revolution in South Lincolnshire. Cambridge: Cambridge University Press.

Harrison, Paul. 1987. The Greening of Africa. London: Paladin Grafton Books.

Hoffman, Philip. 1988. "Institutions and Agriculture in Old Regime France," Politics and Society, **16**, pp. 241-264.

Holderness, B. A. 1988. "Agriculture, 1770-1860." In Charles Feinstein and Sidney Pollard (eds.), Studies in Capital Formation in the United Kingdom 1750-1920. Oxford: Clarendon Press, pp. 9-35.

Houston, J. M. 1963. A Social Geography of Europe. London: Duckworth.

Kerridge, Eric. 1959. "Agriculture, 1500-1793," in Victoria History of the Counties of England, A History of Wiltshire, Vol. 4 London.

Kerridge, Eric. 1992. The Common Fields of England. Manchester: Manchester University Press.

McCloskey, Donald N. 1972. "The Enclosure of Open Fields: Preface to a Study of Its Impact on the Efficiency of English Agriculture in the Eighteenth Century," Journal of Economic History, **32**, pp. 15-35.

McCloskey, Donald N. 1975a. "Persistence of English Common Fields." In European Peasants and Their Markets. Essays in Agrarian Economic History, W. N. Parker and E. L. Jones (eds.). Princeton: Princeton University Press,

pp. 73-119.

McCloskey, Donald N. 1975b. "The Economics of Enclosure: A Market Analysis." In European Peasants and Their Markets. Essays in Agrarian Economic History. W. N. Parker and E. L. Jones (eds.). **Princeton**: Princeton University Press, pp. 123-160.

• **McCloskey**, Donald N. 1989. "The Open Fields of England: Rem, Risk, and the Rate of Interest, 1300-1815." In David Galenson (ed.), Markets in History: Economic Studies of the Past. Cambridge: Cambridge University Press, pp. 5-49.

Madge, S. J. 1938. The Domesday of Crown Lands. London: Frank Cass and Co.

Martin, J. M. 19--. "The **Parliamentary** Enclosure Movement and Rural Society in Warwickshire." Agricultural History Review. 15.

Migot-Adholla, Shem, Peter **Hazell**, Benoit Blarel, and Frank Place. 1989. "Indigenous Land Rights Systems in Sub-Saharan Africa: A Constraint on Productivity?" The World Bank Economic Review, 5(1), pp. 155-75.

Mingay, G. E. 1963. English Landed Society in the Eighteenth Century. London: Routledge and **Kegan** Paul.

North, Douglass and Thomas, Robert P. 1973. The Rise of the Western World. Cambridge: Cambridge University Press;

Orwin, C. S. and C. S. **Orwin**. 1938. The Open Fields. Oxford: Oxford University Press.

Parkinson, R 1808. A General View of the Agriculture of the County of Rutland. London.

Parkinson, R 18 11. A General View of the Agriculture of the County of Huntingdon. London.

Posner, **Richard**. 1977. Economic Analysis of Law. (2nd ed.). Boston: Little Brown.

Purdum, J. L. 1978. "Profitability and the Timing of Parliamentary Enclosure," Explorations in Economic History, 15, pp. 313-26.

Riddell, James and Carol Dickerman. 1986. "Country Profiles of Land Tenure: Africa, 1986" Land Tenure Center, University of Wisconsin-Madison, Paper # 127.

Root, Hilton. 1987. Peasants and King in Burgundy: Agrarian Foundations of French Absolutism. Berkeley: University of California Press.

Slater, Gilbert. 1907. The English Peasantry and the Enclosure of the Common Fields. London.

Tate, W. E. 1978. A Domesday of English Enclosure Acts and Awards. ed. by Michael Turner. Reading.